

CLAIMS

1. A system for in vivo analysis, said system comprising
agglutinative particles capable of interacting with at least one analyte so as to
cause an optical change; and
at least one in vivo imaging system configured for detecting the optical change.
2. The system according to claim 1 comprising at least one illumination source.
3. The system according to claim 1 comprising at least one chamber, said chamber configured
for containing the agglutinative particles and an in vivo sample.
4. The system according to claim 3 wherein the sampling chamber is at least partially
transparent.
5. The system according to claim 3 wherein the imaging system is configured for imaging the
chamber.
6. The system according to claim 1 wherein the imaging system is configured for imaging a
body lumen.
7. The system according to claim 1 wherein the agglutinative particles include at least one
molecule selected from the group consisting of: antibodies, antigens, cells or linkers.
8. The system according to claim 3 wherein the at least one analyte is in the in vivo sample.
9. The system according to claim 1 wherein the optical change is selected from the group
consisting of: a change of color, a change of hue, a change of brightness, a change of
intensity, a change of optical density, a change of transparency, a change of light scattering
or any combination thereof.

10. The system according to claim 1 wherein the in vivo imaging system includes at least a photodiode, a CCD or a CMOS.
11. The system according to claim 6 wherein the body lumen is a gastrointestinal tract.
12. The system according to claim 1 comprising a transmitter.
13. The system according to claim 12 wherein the transmitter is configured for transmitting image data.
14. A device for in vivo analysis, said device comprising the system according to claim 1 or 12.
15. The device according to claim 14 wherein the device is selected from the group consisting of: needles, stents, endoscopes, catheters or ingestible capsules.
16. An ingestible capsule comprising:
 - an optical window, said window having immobilized thereto agglutinative particles capable of interacting with at least one analyte so as to cause an optical change;
 - at least one imaging system configured for detecting at least the optical change; and
 - a transmitter configured for transmitting image data to an external receiving system.
17. The device according to claim 16 comprising at least one chamber, said chamber configured for containing the agglutinative particles and an in vivo sample.
18. A method for in vivo analysis, the method comprising the steps of:
 - obtaining a sample from a body lumen ;
 - combining in vivo the sample with agglutinative particles; and
 - detecting at least one optical change in the combined sample.

19. The method according to claim 18 wherein the step of detecting at least one optical change includes imaging the combined sample.
20. The method according to claim 18 comprising the step of obtaining at least one image of the body lumen.
21. The method according to claim 18 or 20 comprising the step of transmitting data to an external receiving unit.